

Title (en)  
MULTI-PATH COOLING FOR ROBOTIC SYSTEMS

Title (de)  
MEHRWEG-KÜHLUNG FÜR ROBOTERSYSTEME

Title (fr)  
REFROIDISSEMENT À TRAJETS MULTIPLES POUR DES SYSTÈMES ROBOTIQUES

Publication  
**EP 3934864 A4 20221130 (EN)**

Application  
**EP 20766797 A 20200228**

Priority  
• US 201962813505 P 20190304  
• US 2020020373 W 20200228

Abstract (en)  
[origin: WO2020180676A1] This application describes multi-path cooling arrangements for robotic systems. For example, a robotic system can include a heat generating component positioned within a base that supports one or more articulating links. The heat generating component can be supported on a thermally conductive bracket within the base. The robotic system can include a first thermally conductive path configured to dissipate heat from the heat generating component. The first thermally conductive path can include the bracket and a first heatsink connected to the bracket. The robotic system can also include a second thermally conductive path configured to dissipate heat from the heat generating component. The second thermally conductive path can include the bracket, a thermal pad positioned on the bracket, and a second heatsink positioned on a second side of the base.

IPC 8 full level  
**B25J 19/00** (2006.01); **B25J 9/00** (2006.01); **B25J 9/04** (2006.01); **B25J 9/06** (2006.01); **B25J 9/10** (2006.01); **B25J 9/12** (2006.01); **B25J 11/00** (2006.01)

CPC (source: EP US)  
**B25J 9/042** (2013.01 - US); **B25J 9/044** (2013.01 - EP); **B25J 19/0054** (2013.01 - EP US); **H05K 7/20409** (2013.01 - US)

Citation (search report)  
• [A] US 9431881 B2 20160830 - CLENDENEN DAVID ALLEN [US], et al  
• [A] US 2017341223 A1 20171130 - HAHAKURA SEIJI [JP], et al  
• [A] US 2005087034 A1 20050428 - FRIEDRICH BORIS [DE], et al  
• [A] US 2019061178 A1 20190228 - CHIKARA SHINYA [JP], et al  
• See also references of WO 2020180676A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
**WO 2020180676 A1 20200910**; CN 113543944 A 20211022; CN 113543944 B 20240524; EP 3934864 A1 20220112; EP 3934864 A4 20221130; JP 2022521440 A 20220407; JP 7255696 B2 20230411; US 11766787 B2 20230926; US 2022143848 A1 20220512

DOCDB simple family (application)  
**US 2020020373 W 20200228**; CN 202080018692 A 20200228; EP 20766797 A 20200228; JP 2021549664 A 20200228; US 202017435799 A 20200228